

# Information and Control Preferences and Their Relationship With the Knowledge Received Among European Joint Arthroplasty Patients

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**BACKGROUND:** The prevalence of joint arthroplasties is increasing internationally, putting increased emphasis on patient education.

**PURPOSE:** This study describes information and control preferences of patients with joint arthroplasty in seven European countries, and explores their relationships with patients' received knowledge.

**METHODS:** The data ( $n = 1,446$ ) were collected during 2009–2012 with the Krantz Health Opinion Survey and the Received Knowledge of Hospital Patient scale.

**RESULTS:** European patients with joint arthroplasty had low preferences. Older patients had less information preferences than younger patients ( $p = .0001$ ). In control preferences there were significant relationships with age ( $p = .021$ ), employment in healthcare/social services ( $p = .033$ ), chronic illness ( $p = .002$ ), and country ( $p = .0001$ ). Received knowledge of the patients did not have any relationships with information preferences. Instead, higher control preferences were associated with less received knowledge.

**CONCLUSION:** The relationship between European joint arthroplasty patients' preferences and the knowledge they have received requires further research.

## Introduction

Internationally 10% of males and 18% of females older than 60 years are suffering from symptomatic osteoarthritis (Organisation for Economic Co-operation and Development, 2013). A high number of older patients (Eurostat, 2010a, 2010b, 2010c) treated in continuously increasing short-stay surgery (Eurostat, 2010a, 2010b, 2010c) pose a challenge for healthcare and patient education on both a national and an international level (Euractiv.com, 2008). Short-stay surgery calls for increased self-care on the part of patients after hospitalization as well as education tailored on the basis of their individual information and control preferences and cur-

rent level of knowledge (Flynn, Smith, & Vanness, 2006; Ramlall, Sawhney, & Ramlall, 2014).

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Prior research has shown a relationship between patients' preferences and received knowledge (Montin, Johansson, Kettunen, Katajisto, & Leino-Kilpi, 2010; Uldry, Schäfer, Saadi, Rousson, & Demartines, 2013). However, this relationship is not straightforward. For example, patients with lower preferences may assess the knowledge received less critically. When it comes to control preferences, not all patients are able or willing to make decisions about their care, but they want to be informed about decisions made on their behalf (Brom et al., 2014; Ervin & Pierangeli, 2005; Fredericks, Sepali, Souraya, & Wan, 2009). On the other hand, patients with high and critical preferences can perceive an inadequate provision of knowledge as a barrier to participating in decision-making processes (Leino-Kilpi et al., 2009). It is not enough that patients understand their current health status; they should have knowledge to be able to make decisions concerning their own health (Syx, 2008). Moreover, patients have described disempowerment with regard to decision making and an unwillingness to be passive recipients of care (Doherty & Doherty, 2005).

Preferences regarding decision control may be situation specific (e.g., based on cultural or environmental conditions and the health status of the patient) and vary from one decision to another (Kranz, Baum, & Wideman, 1980; Malmgren, Törnvall, & Jansson, 2014; Uldry et al., 2013; Zabalequi et al., 2008). Background factors, such as culture, lower education, or older age, have all been associated with increased willingness to withdraw from decision-making control (Charalambous, Papadopoulos, & Beadsmoore, 2008; Fredericks et al., 2009; Kranz et al., 1980; Papastavrou et al., 2012; Uldry et al., 2013). However, older patients and their families may have higher needs for information than suggested by their spontaneously expressed preferences. For example, with older patients, possible severity of illnesses may cause complicated situations (e.g., at discharge), which is why the assessment of patients' information preferences is important. (Best, 2005; Flynn et al., 2006; Watts & Gandner, 2005). Furthermore, it has been shown that patients do better when they have a say in their own care (Gruman et al., 2010), and effective, tailored patient education reduces the length of hospitalization and thereby affects total healthcare costs. Unmet discharge needs may contribute to poor patient outcomes and readmission (Pieper et al., 2006). To support patients to be information seekers and active participants in the decision making about their care is a challenge for healthcare professionals (Arora & McHorney, 2000; Doherty & Doherty, 2005). It is important to ensure that patients receive sufficient information to enable them to participate according to their preferences (Macario, Schilling, Rubio, Bhalla, & Goodman, 2003; Nilsson, Ivarsson, Alm-Roijer, & Svedberg, 2012; Street, Richardson, Cox, & Suarez-Almazor, 2009).

To be active participants in their own care, patients have to have multidimensional knowledge (Auerbach, 2001; Flynn et al., 2006). In this study, multidimensional knowledge has been divided into biophysiological, functional, experiential, social, ethical, and financial knowledge according to the theory of empowering patient education (Leino-Kilpi et al., 2005; Ryhänen et al.,

2012a; 2012b). Empowering patient education is defined as an educational intervention improving patients' critical thinking and autonomy to make informed decisions (Andersson & Funnell, 2010; Freire, 1993). It is assumed that the better the patients' receive information in accordance with their preferences, the more potential they have for empowerment (Best, 2005; Ryhänen et al., 2012a). This is an internationally recognized (Välämäki et al., 2004) challenge for nursing practice (Nilsson et al., 2012).

The aim of this study was to describe the information and control preferences of patients with joint arthroplasty in seven European countries and to explore the relationships between these preferences and the knowledge received by the patients during their hospital stay. Two research questions guided the study:

1. What is the level of the information and control preferences for patients having joint arthroplasty in seven European countries and their relationship with the patients' background factors?
2. What is the relationship between the patients' information and control preferences and the knowledge received?

## Methods

### STUDY DESIGN

A comparative international structured survey among patients with joint arthroplasty was performed during the years 2009–2012 in seven European countries (Cyprus, Finland, Greece, Iceland, Lithuania, Spain, and Sweden).

### SAMPLE

The sample consisted of patients with elective joint (hip and knee) arthroplasty in all participating countries. The patients had to be able to respond to the questionnaire independently (or with the assistance of another person), understand Finnish/Greek/Icelandic/Lithuanian/Spanish or Swedish and sign a voluntary informed consent. The study is part of a larger European project on empowering patient education of patients with osteoarthritis in the surgical context (ESOPTe, 1998) with a total of 1,634 orthopaedic surgery patients enrolled from seven countries (Valkeapää et al., 2014). In the current study, 1,446 (88%) of those 1,634 patients responded preoperatively (Krantz Health Opinion Survey [KHOS]) and 1,156 (80%) of those 1,446 patients responded postoperatively (Received Knowledge of Hospital Patient [RK<sub>hp</sub>] scale). Patients who completed both the pre- and postoperative questionnaires were included in the analysis of the relationship between information and control preferences and received knowledge, because the special aim of this study was to test the relationship between the patients' preferences (preoperative questionnaire) and the knowledge patients had received (postoperative questionnaire). Thus, the sample size was 1,446 patients in the first phase of the study (research question 1) and was 1,156 patients in the second phase (research question 2).

## INSTRUMENTS AND DATA COLLECTION

Two instruments were used for data collection: KHOS (Krantz, 1980) and the RK<sub>hp</sub> scale (Leino-Kilpi et al., 2005; Rankinen et al., 2007). The KHOS instrument consists of two subscales: Preferences for Information (KHOS-I; 7 statements) and Behavioral Involvement (KHOS-B; 9 statements). KHOS-I describes patients' activities to seek health-related information and KHOS-B describes preferences for participation and control over one's own healthcare. The respondents rate the answers with a binary scale (yes/no), if they agree or not. Thus, the maximum score is 7/16 in KHOS-I and 9/16 in KHOS-B. Sum variables of preferences are sums of individual item codes, higher scores indicating higher levels of preferences for health-related information and higher preferences for control over own care (Krantz et al., 1980).

The validity and reliability of KHOS has been confirmed in earlier studies (Caldwell, 1991; Christensen, Ehlers, Raichle, Bertolatus, & Lawton, 2000; Garvin & Kim, 2000; Krantz et al., 1980; Välimäki et al., 2004). For example, in a study by Leino-Kilpi et al. (2009), the Cronbach  $\alpha$  was .56 for KHOS-I, .74 for KHOS-B, and .68 for the total scale. The test-retest reliability was satisfactory. In the study by Svedberg et al. (2012), the corresponding values were .72, .73, and .71, respectively, with satisfactory test-retest reliability. In the present study, the Cronbach  $\alpha$  was .58 for KHOS-I and .62 for KHOS-B.

The RK<sub>hp</sub> scale measures hospital patients' received knowledge in six subscales: biophysiological (8 items, such as symptoms), functional (8 items, such as mobility), experiential (3 items, such as emotions), ethical (9 items, such as confidentiality), social (6 items, such as significant others), and financial (6 items, such as costs). The scores for each dimension are the mean scores for included items. Responses range between one and four (1 = fully disagree to 4 = fully agree), with higher scores indicating more knowledge received by the patient.

The RK<sub>hp</sub> has been used before in the surgical context and found to be valid and reliable (Rankinen et al., 2007; Ryhänen et al., 2012a; 2012b), and has also been used in orthopaedics (Heikkinen et al., 2007). Rankinen et al. (2007) examined Finnish surgical patients, and reported the internal consistencies of the RK<sub>hp</sub> were satisfactory, with the Cronbach  $\alpha$  total scale above .90 (RK<sub>hp</sub> = 0.93). In the present study, the Cronbach  $\alpha$  for the dimensions of the RK<sub>hp</sub> ranged between .89 and .95, which is satisfactory as well. The instrument was found to be easy to use. This study, however, was the first time the instrument was used in international comparison. Translation of both scales was performed according to the standard back-translation method (Valkeapää et al., 2014). In all the countries, both instruments were piloted and the same data collection protocol was followed. The protocol was accessible to all collaborators on the homepage of the study.

The background factors in this study were patients' gender, chronic illness, educational status, employment status, and country. The data were collected pre and postoperatively in selected hospitals (one to five per country), and the contents of patient education were provided according to the educational model in use in each country. Preoperatively, KHOS was delivered to

the patients by mail before scheduled preoperative counseling. Patients returned the questionnaire by mail or in person at admission before their surgery. Postoperatively, RK<sub>hp</sub> was distributed to patients before discharge and they returned it by mail or to mailboxes in the ward.

## ETHICS OF THE STUDY

All approvals by the regional ethical authorities were based on national standards of each country (reference numbers of ethical approvals: Cyprus Y.Y.15.6.17.9[2]; Finland ETMK:102/180/2008; Greece 3029/17.08.2010; Iceland 09-084-SI; Lithuania Sv 14,17/04/2009; Spain 2010/5955; Sweden Dnr: M69-09. Participants were informed of the purpose and procedures, as well as the voluntary nature and confidentiality of the study (World Medical Association Declaration of Helsinki, 2013). All participants gave an informed consent.

## DATA ANALYSIS

SPSS 19.0 (IBM Corp, Armonk, NY) was used for the analysis of the data. Continuous variables are presented as means and standard deviations. Relationships between information and control preferences with patients' background factors were tested using multifactor analysis of variance and Spearman correlation coefficients. In the RK<sub>hp</sub>, each dimension of empowering knowledge was constructed by calculating the means of the corresponding items. Linear regression models with two independent and one dependent variables were used to find out how the patients' information and control preferences are related to received knowledge.

All 1,446 patients were included in the description of patients and their information and control preferences. The analysis of the differences between the countries (multifactor analysis of variance) included all patients ( $n = 1,046$ ) whose background factors were available. The second phase (regression analysis) included, without background factors, all patients ( $n = 1,075-1,156$ ) who answered both preoperatively (KHOS) and postoperatively (RK<sub>hp</sub>). In all tests, statistical significance was set at .05 (Petrie, 2006), and only statistically significant results are reported.

## Results

The majority of the respondents (see Table 1) were retired females, with a mean age of 67 years ( $SD = 10.7$ /range 25–91). They had rather low levels of education. In different countries, the number of respondents ranged between 23 (2%) and 273 (19%).

## INFORMATION AND CONTROL PREFERENCES AND BACKGROUND FACTORS

Information and control preferences among orthopaedic patients were rather low. Information preferences were statistically significantly ( $p = .010$ ) higher (2.778 [ $SD = 1.70$ ]) than control preferences (2.195 [ $SD = 1.78$ ]). In terms of information preferences, statistically significant relationships were found between age ( $p = .0001$ ) and country ( $p = .004$ ). The older the patients were, the less information preferences they had ( $r = -.141$ ,  $p = .0001$ ).

**TABLE 1. BACKGROUND FACTORS OF THE PATIENTS WHO COMPLETED THE KHOS<sup>a</sup> SCALE PREOPERATIVELY (N = 1,446)**

Background Factor	n	%
Gender		
Female	871	60
Male	555	38
Chronic illness		
Yes	656	45
No	738	51
Educational status		
Basic education		
Primary school	721	50
Comprehensive school	341	24
Matriculation examination	275	19
Vocational education		
No vocational education	646	45
Secondary vocational education	266	18
College level vocational education	209	15
Academic degree	145	10
Employment status		
Employed	375	26
Retired	766	53
Working at home	157	11
Unemployed/job applicant	22	2
Other	43	3
Employed in health/social care		
Yes	239	17
No	1,175	81
Country		
Cyprus	164	11
Finland	251	17
Greece	208	14
Iceland	273	19
Lithuania	23	2
Spain	261	18
Sweden	266	18

Note. KHOS = Krantz Health Opinion Survey.  
<sup>a</sup>© Krantz (1980).

The highest information preferences were found in Sweden and the lowest in Finland and Greece (see Table 2). This difference between Swedish patients and Finnish and Greek patients was also significant.

In control preferences, age also was statistically significant ( $p = .021$ ); the older the patients were, the fewer preferences they had ( $r = -.103, p = .0001$ ). Higher control preferences were associated with being employed in healthcare or social services compared with those who did not have that kind of background (mean: yes, 2.376; no, 2.038,  $p = .033$ ). Patients with chronic illness had

higher control preferences than those without (mean: yes, 2.380; no, 2.034,  $p = .002$ ) and country ( $p = .0001$ , see Table 2). In Cyprus, patients had significantly higher control preferences than in other countries. In Iceland, patients had significantly fewer control preferences than in the other Nordic countries or Greece.

### RELATIONSHIP BETWEEN INFORMATION AND CONTROL PREFERENCES AND RECEIVED KNOWLEDGE

In information preferences, no statistically significant relationship was seen. However, there were statistically significant relationships between control preferences and the knowledge received by patients; this was true in all other dimensions of received knowledge except for the financial dimension (see Table 3). Statistically significant relationships between control preferences and knowledge received were negative: the higher control preferences patients had, the less knowledge they received.

## Discussion

This study aims to describe the information and control preferences of orthopaedic patients, and the relationship of these preferences with the knowledge the patients received during their hospital stay. The ultimate goal was to find evidence for nurses to use the analysis of patients' preferences to improve the education of these patients.

The results indicate that European patients with joint arthroplasty have low levels of preference for both information and control. These scores were lower than a sample of cardiac patients (Nilsson et al., 2012). In the study by Nilsson et al. (2012), the patients were mostly older than 65 years, and had more information than control preferences, as was also the case in the present study. In patients scheduled to undergo elective gastrointestinal surgery ( $n = 253$ ), in the study of Uldry et al. (2013), 73% of the patients wished to get detailed information whereas 64% wished to have an active role in decision making. Similarly, in this study the focus of patients' preferences, although at a low level, seems to lean more toward information preferences than control preferences.

This study has two important main findings. First, patients' information preferences do not seem to influence the knowledge received during hospitalization. One explanation might be that patients' capacity to receive information is limited and they are unsure in defining the level of the knowledge they have received (Heikkinen, Leino-Kilpi, Nummela, Kaljonen, & Salanterä, 2008). If questionnaires regarding received knowledge had been presented post-discharge, at a time when the patients were in better physical state and less stressed, the results could have been different. Furthermore, it may be that older patients, such as most of the participants in this study, with lower preferences, do not necessarily consider whether the knowledge they receive is sufficient or not. As mentioned, the relationship between the level of patients' preferences and the sufficiency of the knowledge they receive still remains undefined (Montin et al., 2010; Uldry et al., 2013). However, the results of this study confirm the patient-centered view that core information must be provided

**TABLE 2. SIGNIFICANT DIFFERENCES BETWEEN THE COUNTRIES IN KHOS-I<sup>a</sup> (0–7) AND KHOS-B<sup>a</sup> (0–9) (N = 1,046)**

Country	n	KHOS-I[95% CI]	Mean Difference Between Countries[95% CI]	p Value <sup>b</sup>
Cyprus	130	3.079[2.673, 3.486]		
Spain	159	2.799[2.370, 3.228]		
Lithuania	16	2.698[1.844, 3.552]		
Sweden	141	3.244[2.864, 3.624]		
vs. Greece	173	2.562[2.180, 2.944]	0.682[0.025, 1.338]	.034
vs. Finland	198	2.655[2.297, 3.013]	0.589[0.010, 1.168]	.042
Iceland	229	3.141[2.813, 3.469]		
Country	n	KHOS-B[95% CI]	Mean Difference Between Countries[95% CI]	p Value <sup>b</sup>
Cyprus	130	3.300[2.883, 3.718]	1.573[0.913, 2.233]	.0001
vs. Spain	159	1.728[1.287, 2.168]	1.088[0.441, 1.736]	.0001
vs. Greece	173	2.212[1.819, 2.605]	1.151[0.483, 1.819]	.0001
vs. Sweden	141	2.149[1.759, 2.540]	1.139[0.527, 1.751]	.0001
vs. Finland	200	2.161[1.794, 2.529]	1.764[1.144, 2.383]	.0001
vs. Iceland	229	1.536[1.199, 1.874]		
Iceland	229	1.536[1.199, 1.874]		
vs. Greece	173	2.212[1.819, 2.605]	-0.675[-1.304, -0.046]	.024
vs. Sweden	141	2.149[1.759, 2.540]	-0.613[-1.189, -0.037]	.026
vs. Finland	200	2.161[1.794, 2.529]	-0.625[-1.165, -0.084]	.010
Lithuania	16	2.362[1.485, 3.240]		

Note. CI = confidence interval; KHOS-B = Krantz Health Opinion Survey-Behavioral; KHOS-I = Krantz Health Opinion Survey-Information.  
<sup>a</sup>© Krantz (1980).

<sup>b</sup>Multifactor analysis of variance.

to all patients, in addition to which, tailored education must be given to individual patients according to their preferences (Macario et al., 2003). However, the core set may not be sufficient for some patients and access official Internet-based patient education could therefore be a solution where patients could explore knowledge over and over again and adopt information gradually before they are admitted to hospital (Heikkinen et al., 2008;

Macario et al., 2003). This would allow them form their own preferences for the information they want to receive during their hospital stay. Thus, the quality of received information can also have a role: the patients do not necessarily want to know things they already know. There is a need for further analysis of the quality of patient education, both pre- and postoperatively. The general knowledge level of population has increased,

**TABLE 3. DIMENSIONS OF KNOWLEDGE OF THE PATIENTS PREDICTED WITH KHOS SUBSCALES (RK<sub>hp</sub>-SCALE<sup>a</sup>, 1 = FULLY DISAGREE TO 4 = FULLY AGREE) AND KHOS-I<sup>b</sup> (0–7) AND KHOS-B<sup>b</sup> (0–9) (N = 1,075–1,156)**

Dimension of Knowledge	Relationship Between KHOS-I and Received Knowledge B (p <sup>c</sup> )	Relationship Between KHOS-B and Received Knowledge B (p <sup>c</sup> )	R <sup>2</sup> of Regression Model
Biophysiological	0.014 (.307)	-0.063 (<.001)	0.020
Functional	0.013 (.281)	-0.055 (<.001)	0.019
Experiential	-0.017 (.378)	-0.067 (<.001)	0.014
Ethical	-0.020 (.240)	-0.057 (<.001)	0.013
Social	-0.034 (.057)	-0.054 (<.001)	0.015
Financial	-0.033 (.110)	-0.026 (.183)	0.005
Total	-0.011 (.450)	-0.056 (<.001)	0.017

Note. KHOS-B = Krantz Health Opinion Survey-Behavioral; KHOS-I = Krantz Health Opinion Survey-Information; RK<sub>hp</sub> = Received Knowledge of Hospital Patient.

<sup>a</sup>© Leino-Kilpi, Salanterä, and Hölttä (2003).

<sup>b</sup>© Krantz (1980).

<sup>c</sup>Regression analysis.

and the results may indicate a need to develop the education, and in particular to analyze the knowledge level of patients preoperatively.

The second important finding is that patients' control preferences were negatively associated with the level of received knowledge, supporting the earlier findings by Leino-Kilpi et al. (2009), also made among surgical patients. Similarly, Auerbach (2001) reported that patients want more detailed information about their health to be in control, although decision making itself, or collaboration in decision making, is skewed in the direction of professionals. Patients want, at least, to be informed about any decisions made or decisions to be made on their behalf (Brom et al., 2014; Ervin & Pierangeli, 2005).

High preferences for control mean that patients want to be active, make decisions, and take care of themselves. They may thus already have knowledge about their health, have actively found answers to their possible questions—and may feel that they no longer to receive much information. This also can be connected with the quality of the knowledge and education offered: if the knowledge is on a too basic level, the patients may not experience that they receive any information. This needs to be tested in future by using a randomized control trial design: knowledge test should be used to obtain a more objective view of the level of the knowledge used in sufficient patient education.

Patients' preferences seem to be related to some background factors, as found already in earlier studies (Charalambous et al., 2008; Flynn et al., 2006; Zabalegui et al. 2008). On the basis of our results, age and working in the healthcare and social sector can have a relationship with patients' preferences. For example, older patients had less preferences than younger ones; this has also been seen before (Flynn et al., 2006; Leino-Kilpi et al., 2009). The lower information preferences of older patients might be connected with family involvement in the surgical process. In countries such as Cyprus, Greece, and Spain, it is actually a norm for children to make decisions on behalf of their parents (Charalambous et al., 2008; Zabalegui et al., 2008). Older people may also have a different attitude toward healthcare, accepting treatment and education (Fredericks et al., 2009). In future, the preferences of older people have a particular importance due to their increasing number, and due to the outcomes of education. Patients with memory disorders will also make up a special group in the field of orthopaedic patient education, challenging all current educational solutions (Flynn et al., 2006; Watts & Gandner, 2005).

Patients who had experience of working in healthcare or social services had significantly more preferences than their counterparts. Their inside knowledge of the welfare systems in their country may affect their preferences and provide them with certain assertiveness and interest in seeking information and being in control of their healthcare. Chronically ill patients had also significantly more control preferences. Their experiences and earlier knowledge about the healthcare system may have given them more courage or need for control over their own care, thus making them more demanding in terms of receiving information.

In knowledge received by the patients, some dimensions of knowledge were received less than others. For example, financial knowledge was not received. This result may be connected with the fact that the data in this study were mainly collected in public healthcare, which in many countries covers all or most costs, and health-related issues may therefore have been more emphasized by the patients. Patients expect more knowledge about their financial issues in ambulatory surgery because of the short duration of the hospital stay and because recovery and rehabilitation take place at home (Leino-Kilpi et al., 2009; Rankinen et al., 2007; ). Moreover, older patients who have undergone orthopaedic joint surgery use more services postoperatively than younger patients and have therefore higher costs (Best, 2005). Thus, the financial dimension is an important dimension to include in teaching.

The culture in each society may influence the healthcare system and patients' participation and preferences for knowledge (Ervin & Pierangeli, 2005). Information provision in the Nordic healthcare has been perceived to be on a high level in Europe (Björnberg, 2012). In this study, patients in Sweden had the highest information preferences whereas those in Finland and Greece had the lowest. Is this a question of a high level of information provision producing gradually higher preferences among patients (Sweden) or do patients' low information preferences mean that the preferences of patients and the provision of information have already met (Finland). The meaning of this finding thus remains unclear.

According to this study, differences in control preferences between countries were more evident than differences in information preferences. This may have connections with the patients' possibilities for control, decision making, and active participation in their treatment and care. Also, decisions may be made collectively and not individually in countries with strong family ties, such as Cyprus (Papastavrou et al., 2012). However, in this study, patients in Cyprus had the highest preferences for control, which might also predict changes in the country's traditional practices in patients' decision making concerning their own health. Thus, this study gives a relevant reason to analyze in more detail also the realization of patient education in different countries. Cultural background is an important aspect that needs to be taken into consideration when planning education for patients.

In summary, patients' preferences over their healthcare vary (Arora & McHorney, 2000; Doherty & Doherty, 2005; Malmgren et al., 2014). Patients' low-level preferences indicate that patients may not be active participants in their care but rather leave the decision making to the health professionals. This can be partially attributed to the authority of healthcare professionals, doctors and nurses' roles, hospital environment, or societies' tradition about patients' activity. Patients may also perceive themselves as not having sufficient skills or ability to express themselves, or they may be afraid of making mistakes—all these can influence their preferences. Patients may need education in decision making, finding and looking after knowledge, and drawing conclusions on the basis of the knowledge.

If patients learn to have higher preferences, it cannot fail to have positive effects on the outcomes of patient

care, patient education, or the quality of healthcare in general (Arora & McHorney, 2000; Doherty & Doherty, 2005; Malmgren et al., 2014; Say, Murtagh, & Thomson, 2006).

The findings of this study can be used by both nurse managers and clinical nurses, aiming to promote empowering patient education. From the perspective of managers, the results indicate a need to establish a system to analyze patients' preferences at the beginning of their process, also in electronic format, and to evaluate the quality of the system. From the perspective of clinicians, the results indicate a need to find instruments to analyze the preferences of individual patients.

## LIMITATIONS OF THE STUDY

In this study, there are some issues that need to be taken into account from the point of view of validity and reliability. The Cronbach  $\alpha$  for KHOS-I and KHOS-B was rather low. Diversity of the languages and translations of the questionnaires may have influenced the internal consistency of the study. Thus, the internal consistency of this study can be considered as marginal as it was in the study by Välimäki et al. (2004) (Cronbach  $\alpha$  = .61) with five countries taking part. Furthermore, as many countries, such as Sweden and Finland, are currently multicultural, culture may have influenced the results in this study. There may have been respondents who have some other cultural background than the country of their current residence.

There may have been some differences because of variation in care practices in different countries and hospitals and patients may also have had received preoperative information (e.g., from the Internet). However, the data collection was based on a common protocol. Furthermore, the patients were mostly older people, which is not necessarily a limitation but a characteristic feature of this study. The sample size was consistent and adequate in most countries although the sample size in Lithuania was low and does not allow for drawing any further conclusions. However, the responses of all patients were considered important and all participating countries were included in the study. Therefore, Lithuania was included in the description of patients and their preferences at the European level but not in comparisons between different countries. Furthermore, the data were collected for this study and therefore generalization of the results should be made with caution. However, the results can be seen as an initial comparison between European countries and they give suggestions for further studies in the field of orthopaedic nursing care. The results also give a basis to continue collaboration and future analyses in the field: the numbers of orthopaedic procedures are increasing in all these countries.

## Conclusion

The result of this study confirms that provision of information, according to patients' preferences, should be a norm and is a necessity for the patients. To ensure the quality of provision of information, and patient education regarding patients' participation and decision making, further studies are warranted. Research should focus on the kind of knowledge patients prefer to receive to improve their skills in participation regarding their own healthcare. The new patient directive (Directives,

2011) allows patients to receive treatment and care in other EU countries. Thus, to find out cultural differences about knowledge regarding patients' decision making, collaboration between European countries in nursing research is desirable to produce high-level patient education for patients with joint arthroplasty.

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